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Nota di contenuto	Frontmatter -- List of contributing authors -- Table of Contents -- Introduction: Nano- (and micro-)materials and human wellbeing -- 1. Coating antibacterial nanoparticles on textiles: Towards the future hospital in which all textiles will be antibacterial / Gedanken, Aharon / Perkas, Nina / Perelshtein, Ilana -- 2. Automated solutions for high-throughput experimentation in heterogeneous catalyst research / Brancaleoni, Dario / Squassabia, Federico -- 3. Insights from XPS on nanosized inorganic materials / Malitesta, Cosimino / Margapoti, Eleonora -- 4. Single crystal and powder XRD techniques: An overview / Altomare, Angela / Cuocci, Corrado / Moliterni, Anna / Rizzi, Rosanna -- 5. Structural and electronic characterization of nanosized inorganic materials by X-ray absorption spectroscopies / Borfecchia, Elisa / Agostini, Giovanni / Bordiga, Silvia / Groppo, Elena / Garino, Claudio / Gobetto, Roberto / Agostino, Angelo / Mino, Lorenzo / Truccato, Marco / Gianolio, Diego / Piovano, Andrea / Martinez-Criado, Gema / Salassa, Luca / Lamberti, Carlo -- 6. Lens-less scanning X-ray microscopy with SAXS and WAXS contrast / Giannini, Cinzia / Altamura, Davide / Aresta, Brunella Maria / Sibillano, Teresa / Siliqi, Dritan / De Caro, Liberato --

7. Characterization of inorganic nanostructured materials by electron microscopy / Comparelli, Roberto / Fanizza, Elisabetta / Striccoli, Marinella / Curri, M. Lucia -- 8. Nanosized particles: questioned for their potential toxicity, but some are applied in biomedicine / Dibenedetto, Angela / Fasciano, Stefania / Colucci, Antonella / Aresta, Michele -- Index

Sommario/riassunto

The demand for new materials with novel properties on the micro- and nano-scale continues to grow. This book provides an overview of state-of-the-art techniques for the synthesis and characterization of inorganic nanomaterials including sonochemistry, microwave dielectric heating, sonoelectrochemistry and RAPET, high-throughput experimentation in heterogeneous catalyst research, photoluminescence, and methods for surface structuring. Imaging techniques include X-ray photoelectron spectroscopy, X-ray absorption spectroscopy, single crystal and powder X-ray diffraction, X-ray microimaging (SAXS, WAXS & GISAXS), electron microscopy, and solid state NMR. The work is essential reading for all researchers in academia and industry working in the field of nanosciences.
